

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SOON CHYE CHAN and BAK HONG CHIA

Appeal No. 2004-1481
Application No. 09/726,659

ON BRIEF

Before OWENS, WALTZ, and KRATZ, Administrative Patent Judges.
WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the primary examiner's final rejection of claims 1, 2, 4 through 6, 8 through 10, 13, 14, 17 and 18, which are the only claims remaining in this application.¹ We have jurisdiction pursuant to 35 U.S.C. § 134.

According to appellants, the invention is directed to a capacitive sensor for detecting bubbles in spin-on-glass (SOG)

¹An amendment subsequent to the final rejection was refused entry by the examiner (see the amendment dated Mar. 12, 2003, Paper No. 15, refused entry as per the Advisory Action dated Mar. 31, 2003, Paper No. 16; see also the Brief, page 3).

flowing through a SOG tube (Brief, page 3). Appellants state that the claims do not stand or fall together (Brief, page 5) and presents reasonably specific, substantive reasons for the patentability of several individual claims (e.g., Brief, pages 9-13). We consider these claims separately to the extent of appellants' individual arguments. See 37 CFR § 1.192(c)(7)(2000). Representative independent claim 1 is reproduced below:

1. A spin-on glass delivery system having a capacitive sensor to detect gas bubbles in a SOG tube comprising:

- a) a spin-on-glass (SOG) tube connected to a SOG tool;
- b) a capacitive sensor mounted on said SOG tube wherein said capacitive sensor detects gas bubbles in SOG flowing through said SOG tube.

The examiner relies upon the following references as evidence in support of the rejections on appeal:

Neoh	5,470,604	Nov. 28, 1995
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On	6,024,249	Feb. 15, 2000
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DC Capacitive Sensors, Technical Data - Series 40, Rechner

Industrie-elektronik GmbH, 3 pages, undated.²

²Appellants do not contest the availability of this document as prior art. We note that appellants cited this document in the Information Disclosure Statement dated Jan. 25, 2001, Paper No. 2.

The following rejections are before us in this appeal:

(1) claims 10, 13, 14, 17 and 18 stand rejected under 35 U.S.C. § 112, first paragraph, as containing "new matter" (Answer, page 4);

(2) claims 1 and 5 stand rejected under 35 U.S.C. § 102(b) as anticipated by Neoh (*id.*);

(3) claims 1, 2, 5, 6, 8 and 9 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Neoh in view of On (Answer, page 5); and

(4) claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Neoh or Neoh in view of On, either further in view of *DC Capacitive Sensors* (Answer, page 8).³

We *affirm* the rejections based on section 112, ¶1, and section 103(a) essentially for the reasons stated in the Answer and those reasons set forth below. We *reverse* the rejection based on section 102(b) for reasons set forth below. Accordingly, the decision of the examiner to reject the claims on appeal is affirmed.

³All rejections of claims 14, 17 and 18 under 35 U.S.C. § 103(a) have been withdrawn by the examiner (Answer, page 3, ¶(6) and page 9).

OPINION

A. The Rejection under § 112, ¶1

The examiner finds that the exclusion of a backing plate as recited in claims 10, 13, 14, 17 and 18 is not disclosed or suggested in the original disclosure and thus is considered "new matter" (Answer, page 4). The examiner further finds that original Figures 1, 2 and 3 do not reasonably convey that appellant specifically intended to exclude sensors with backing plates (*id.*).

The initial burden of establishing failure to meet the "written description" requirement of section 112, ¶1 (i.e., "new matter") rests with the examiner. See *In re Alton*, 76 F.3d 1168, 1175, 37 USPQ2d 1578, 1583 (Fed. Cir. 1996). The examiner must establish that the originally filed disclosure would not have reasonably conveyed to one of ordinary skill in the art that appellant was in possession of the subject matter in question at the time of filing the application. See *In re Edwards*, 568 F.2d 1349, 1351-52, 196 USPQ 465, 467 (CCPA 1978). We determine that the examiner has met this initial burden by finding that the originally filed disclosure, including the drawings, did not disclose that a backing plate was excluded. See *In re Alton*, *supra* (If the applicant claims embodiments of the invention that are completely outside the scope of the specification, then the

examiner need only establish this fact to make out a *prima facie* case). Thus the burden of proof has shifted to appellant. *Id.*

Appellant does not point to any explicit disclosure supporting the contested negative limitation but argues that "such exclusion in [sic, is] implicit in the disclosure." Brief, page 5. As support for this argument, appellant states that no backing plate was described in the specification and if the invention used a backing plate, the specification would have stated so (*id.*). Appellant further argues that since Neoh "teaches away" from appellant's "no backing plate embodiment," it is permissible for appellant to exclude Neoh's backing plate (Brief, page 6). Finally, appellant argues that Figure 2 and the specification at page 3, ll. 15-16, do not show a backing plate and thus provide support for the negative limitation (*id.*).

Appellant's arguments are not persuasive. Merely citing the lack of description of the negative limitation in question does not provide support for this limitation, as an infinite number of elements are not described by appellant's specification. See *Ex parte Grasselli*, 231 USPQ 393, 394 (Bd. App. 1986). Furthermore, appellant's argument is not well taken that if the invention used a backing plate the specification would have so stated since the specification need not disclose that which is well known in the

art. See *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). From the teachings of Neoh, backing plates were well known in this art. Finally, as noted by the examiner (Answer, page 4), original Figures 1-3 are schematic drawings and are silent as to whether a backing plate is included or excluded.

For the foregoing reasons and those stated in the Answer, we determine that appellant has not conveyed with reasonable clarity to those skilled in this art that, as of the date of this invention, appellant was in possession of the invention as now claimed. Accordingly, we affirm the examiner's rejection of claims 10, 13, 14, 17 and 18 under 35 U.S.C. § 112, ¶1, for failure to fulfill the "written description" requirement.

B. The Rejection under § 102(b)

The examiner finds that Neoh discloses a system *capable* of delivering SOG comprising a tube *capable* of delivering SOG connected to a tool *capable* of using SOG and a capacitive sensor mounted on the tube that is *capable* of detecting bubbles in the SOG flowing through said tube (Answer, page 4, italics added). The examiner's position is that the recitation of the intended use of the claimed invention does not result in a structural difference between the claimed invention and the prior art (Neoh) (Answer, page

10). The examiner finds that the structure of Neoh is "considered capable" of delivering SOG (*id.*).

On this record, considering Neoh alone, we disagree with the examiner's finding that Neoh is "considered capable" of delivering SOG. As argued by appellant (Brief, page 7),⁴ Neoh is directed to using photoresist, not SOG (see Neoh, abstract; col. 1, ll. 11-14). On this record, the examiner has not established, by convincing reasoning or factual evidence, that SOG is capable of being delivered using the tubes and nozzle of Neoh (see col. 1, ll. 20-22). Therefore we determine that the examiner has failed to meet the burden of establishing a *prima facie* case of anticipation. See *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997). Accordingly, we do not sustain the rejection of claims 1 and 5 under section 102(b) over Neoh.

C. The Rejections under § 103(a)

The examiner adopts the findings from Neoh as discussed above and in the Answer (page 5). However, the examiner applies On to show a similar fluid delivery system to Neoh but where an optical

⁴We note that appellant argues claim 1 as amended (Brief, page 7). However, as noted in footnote 1, this amended claim was refused entry by the examiner. Therefore we decide this appeal as to claim 1 as found in the file record. This error by appellant does not affect our decision as noted *infra*.

sensor is used to detect bubbles in the fluid feed tube and the fluid feed may be photoresist, etchant or SOG (*id.*; col. 1, ll. 7-14 and 49-53). From these findings, the examiner concludes that it would have been obvious to one of ordinary skill in this art to use the delivery system of Neoh to supply SOG with a reasonable expectation of success in determining bubbles in the SOG using a capacitive sensor due to the differing dielectric constants (Answer, page 5). We agree in view of the teachings from On.

Appellant argues that it is improper to combine Neoh and On as these references solve different problems (Brief, page 9). As correctly stated by the examiner (Answer, pages 12-13), Neoh and On are directed to solving the same problem, namely the formation of gas bubbles in the fluid being delivered to coat the semiconductor wafer (Neoh, col. 1, ll. 30-37; On, col. 1, ll. 23-26; col. 2, ll. 1-2). Although Neoh is limited to delivering photoresist (as discussed above with regard to the rejection under section 102(b)), On teaches that the delivery of photoresist, SOG and etchant all have the same bubble problem (col. 1, ll. 1-53; col. 2, ll. 1-2). We agree with the examiner that, in view of the teachings of Neoh regarding the detection of bubbles using the capacitive sensor to determine dielectric constants of the fluid, the tube, and the gas bubbles (col. 1, ll. 44-48), one of ordinary skill in this art

would have had a reasonable expectation of success reconfiguring the system of Neoh for use with the SOG of On. See *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894, 903-04, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

Appellant argues that Neoh "teaches away" from the recitation in claims 6 and 9 of a pressurized SOG bottle by teaching a pump (Brief, page 10). This argument is not persuasive for reasons noted by the examiner (Answer, page 14), namely that On teaches the use of pressurized gases as an alternative to the pumping system of Neoh.

Appellant argues that the claims exclude backing plates while Neoh teaches that a backing plate is critical (Brief, page 10). This argument is not well taken since the claims rejected under section 103(a) do not exclude backing plates (Answer, page 14).

Appellant argues, with respect to claim 6 on appeal, that neither Neoh nor On suggest the use of nitrogen as a pressurized gas (Brief, page 11). This argument is not persuasive since the examiner has stated that the prior art use of an inert gas such as helium would have suggested the use of other inert gases such as nitrogen (Answer, pages 14-15). Appellant has not contested this statement by the examiner. Additionally, we note that On

generically teaches the use of any "pressurized gas supply 18" to move the fluid through the tubes to the nozzle (col. 2, ll. 51-52).

Appellant argues that On teaches a H₂ gas while claim 9 on appeal is limited to a nitrogen gas supply (Brief, page 12). This argument is not well taken for reasons stated above and in the Answer, although we note that appellant is confusing hydrogen with the helium specifically disclosed by On (see Figure 2).

With regard to the rejection of claim 4, appellant does not contest the examiner's finding from *DC Capacitive Sensors* but merely reiterates the arguments discussed above (Brief, page 13). Accordingly, we adopt the examiner's findings of fact and conclusion of law regarding the rejection of claim 4 as noted in the Answer.

For the foregoing reasons and those stated in the Answer, we determine that the examiner has established a *prima facie* case of obviousness in view of the reference evidence. Based on the totality of the record, including due consideration of appellant's arguments, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of section 103. Accordingly, we affirm both of the examiner's rejections based on section 103(a).

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D. Other Issues

In the event of further or continuing prosecution upon the return of this application to the jurisdiction of the examiner, the patentability of claims 10, 13, 14, 17 and 18 under 35 U.S.C. § 103(a) over Neoh in view of On should be reconsidered. Neoh does not teach that bubbles *cannot* be detected when using a capacitive sensor alone (i.e., without a backing plate), but only teaches that "[s]ome bubbles that cannot be distinguished from resist without the backing plate can be detected with the detector using the backing plate." Col. 3, ll. 14-16; see also col. 1, ll. 44-51. Therefore the examiner should determine whether it would have been obvious to one of ordinary skill in this art to omit the backing plate with a corresponding loss of quality. See *In re Hamilton*, 404 F.2d 1388, 1390, 160 USPQ 199, 201 (CCPA 1969).

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No time period for taking any subsequent action in connection
with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

TERRY J. OWENS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
THOMAS A. WALTZ)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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)	
PETER F. KRATZ)	
Administrative Patent Judge)	

TAW/jrg

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GEORGE O. SAILE & ASSOCIATES
28 DAVIS AVENUE
POUGHKEEPSIE, NY 12603